

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended) A medium transportation apparatus comprising:
a sucking unit including a medium transportation surface on which a plurality of sucking holes are formed, a decompression chamber communicating with the sucking holes and a sucking device for sucking air in the decompression chamber;

a delivering device for ~~sucking-supplying~~ a medium-supplied onto the medium transportation surface of the sucking unit;

~~on to~~ wherein, the medium supplied onto the medium transportation surface is sucked through the sucking hole by the sucking device, and ~~delivering-delivered~~ the medium from an upstream side of the sucking unit to a downstream side thereof,

wherein each of the sucking holes of the sucking unit is formed by a through hole section communicating with the decompression chamber and a sucking chamber having a larger area of a sucking surface opposed to the medium than a sectional area of the through hole section. and

wherein ~~a side edge-edges~~ of said sucking chamber extending in a transporting direction of the medium are provided with ~~a flared slant face~~ faces.

2. (previously presented) The medium transportation apparatus according to claim 1, wherein each of the sucking chambers includes a concave portion formed onto the medium transportation surface and the sucking chambers are mutually partitioned by partition walls.

3. (currently amended) The medium transportation apparatus according to claim 2, wherein the concave portion is partitioned and formed by the partition walls in a main scanning direction and a subscanning direction of the transportation apparatus,

wherein the subscanning direction is ~~a~~the transportation direction of the medium, and the main scanning direction is orthogonal to the transportation direction.

4. (previously presented) The medium transportation apparatus according to claim 2, wherein each of the sucking chambers has a sucking surface formed by an almost rectangular concave portion.

Claim 5 (canceled)

6. (previously presented) The medium transportation apparatus according to claim 4, wherein a width of a top of the partition walls is smaller than a dimension of one side or a diameter of the sucking surface of the sucking chamber.

7. (previously presented) The medium transportation apparatus according to claim 4, wherein a top of the partition walls is formed linearly with an area of approximately zero.

8. (previously presented) The medium transportation apparatus according to claim 4, wherein a top of the partition walls in at least a main scanning direction is formed linearly with an area of approximately zero,

wherein the main scanning direction is a direction orthogonal to a transportation direction of the medium.

9. (currently amended) A liquid fixing apparatus comprising the medium transportation apparatus according to ~~any of claims 1 to 8~~claim 1.

10. (currently amended) A sucking unit comprising:
a sucking and holding section provided with a plurality of sucking holes;
a decompression chamber formed integrally with the sucking and holding section and communicating with the sucking holes, and
a sucking device for sucking air in the decompression chamber,
wherein a medium supplied onto the sucking and holding section is sucked onto the sucking and holding section by the sucking device through the sucking holes,

wherein each of the sucking holes is formed by a through hole section communicating with the decompression chamber and a sucking chamber in which an area of a sucking surface opposed to the medium is larger than a sectional area of the through hole section, and

wherein ~~a side edge~~ edges of said sucking chamber extending in a transporting direction of the medium ~~is~~ are provided with ~~a flared slant face~~ faces.

11. (previously presented) A medium transportation apparatus for sucking and delivering a medium supplied onto the medium transportation surface,

wherein the medium transportation surface is provided with a plurality of sucking chambers, each of which has a bottom surface and a pair of slant faces located on opposite sides of said bottom surface, said sucking chambers being configured such that a space (h) between the adjacent sucking chambers, a distance (i) of one of said slant faces, a distance (j) of said bottom surface and a distance (k) of the other of said slant faces are equal to one another so as to be capable of absorbing an improper state by a wrinkle generated in the medium.

12. (previously presented) The medium transportation apparatus according to claim 11, wherein the plurality of sucking chambers are formed corresponding to an extension rate of the medium.

13. (previously presented) The medium transportation apparatus according to claim 11, wherein the plurality of sucking chambers are formed corresponding to a shape of a wrinkle generated on the medium.

14. (previously presented) The medium transportation apparatus according to claim 11, wherein a regulating device for regulating a shape of a wrinkle generated on the medium is provided on an upstream side of transportation from the medium transportation surface.

15. (canceled).

16. (previously presented) The medium transportation apparatus according to claim 11, further comprising: a sucking unit including
a plurality of sucking holes provided on the medium transportation surface,
a decompression chamber communicating with the sucking holes, the sucking holes communicating with the decompression chamber and
a sucking device for sucking air in the decompression chamber,
wherein each of the sucking holes corresponds to each of the plurality of sucking chambers, the plurality of sucking chambers having a larger area of a sucking surface opposed to the medium than a sectional area of the sucking hole.

17. (currently amended) A liquid fixing apparatus comprising the medium transportation apparatus according to ~~any of claims 11 to 14 and 16~~claim 11.

18. (currently amended) A medium transportation apparatus for sucking and delivering a medium supplied onto a medium transportation surface, comprising:

a ~~dimple~~plurality of dimples provided in the medium transportation surface, in each of which a sucking hole is formed, the each dimple having a depth changed in a transportation direction of the medium,

a sucking unit ~~including a plurality of sucking holes provided on the medium transportation surface,~~

a decompression chamber communicating with the sucking holes and the sucking holes communicating with the decompression chamber, and

a sucking device for sucking air in the decompression chamber,

~~wherein each of the sucking holes includes a sucking chamber having a larger area of a sucking surface opposed to the medium than a sectional area of the sucking hole, so that the sucking chamber functions as the dimple~~ each dimple is formed such that a depth is gradually decreased toward an edge thereof on a downstream side along a transportation direction of the medium.

Claims 19 and 20 (canceled).

21. (previously presented) A liquid fixing apparatus comprising the medium transportation apparatus according to claim 18.

22. (previously presented) A medium transportation apparatus according to claim 1, wherein a hard porous material is provided in a position corresponding to a medium edge section of the medium transportation surface.

23. (previously presented) The medium transportation apparatus according to claim 22, wherein a hard porous material is provided in positions corresponding to widths of various papers of the medium.

24. (previously presented) The medium transportation apparatus according to claim 22, wherein the hard porous material is provided to be extended in a lateral direction of the medium.

25. (previously presented) The medium transportation apparatus according to claim 22, wherein the hard porous material is removably attached to the medium transportation surface.

26. (previously presented) The medium transportation apparatus according to claim 22, wherein an absorbing material is provided on an underside of the hard porous material.

27. (previously presented) The medium transportation apparatus according to claim 22, wherein a lower part of the hard porous material communicates with a decompression chamber.

28. (currently amended) A liquid fixing apparatus comprising the medium transportation apparatus according to ~~any of claims 22 to 27~~claim 22.

29. (previously presented) A medium transportation apparatus comprising:
a medium transportation surface on which a medium is sucked and transported,
a sucking chamber formed on the medium transportation surface extending in a transportation direction substantially from an upstream end to a downstream end of the medium transportation surface; and
a plurality of sucking holes formed in the sucking chamber,
wherein a chamfer is provided in at least one of an air inlet portion and an air outlet portion in each sucking hole formed on the medium transportation surface.

30. (previously presented) The medium transportation apparatus according to claim 29, wherein a chamfered surface of the air inlet portion of the sucking hole is a rounded surface.

31. (previously presented) The medium transportation apparatus according to claim 30, wherein a radius of the rounded surface ranges from 0.2 mm to 1 mm.

32. (previously presented) The medium transportation apparatus according to claim 29, wherein a chamfered surface of the air outlet portion of the sucking hole is a tapered surface.

33. (previously presented) The medium transportation apparatus according to claim 32, wherein a taper of the tapered surface has an opening angle ranging from 60 degrees to 90 degrees and an axial length ranging from 1 mm to 2 mm.

34. (previously presented) A liquid fixing apparatus comprising the medium transportation apparatus according to claim 29.

35. (currently amended): A medium transportation apparatus comprising:
a medium transportation surface on which a medium is sucked and transported;
a plurality of sucking chambers aligned to a transportation direction of the medium on said transportation surface, wherein a sucking hole is formed in substantially a center of each of said sucking chambers;

wherein ~~a side~~ edge-edges of said sucking chamber extending in a transporting direction of the medium are provided with ~~a flared slant face~~ faces.

36. (currently amended) A medium transportation apparatus comprising:
a medium transportation surface on which a medium is sucked and transported;

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a sucking chamber formed on the medium transportation surface extending in a transportation direction of the medium substantially from an upstream end to a downstream end of the medium transportation surface; and

a plurality of sucking holes formed in the sucking chamber,

wherein ~~a side edge~~ edges of said sucking chamber surrounding an entire periphery thereof ~~is~~ are provided with ~~a flared slant face~~ faces.

37. (new) The medium transportation apparatus according to claim 35, wherein side edges of said sucking chamber surrounding an entire periphery thereof are provided with flared slant faces.